

Week 1 - Lab 1: Introduction to Spreadsheets and Basic Calculations

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CPSC 203 - T16

Winter 2009



Welcome 😊

- This is your first tutorial in CPSC 203...
- Our goal is to have an enjoyable experience learning more about Computers and Software.
- Please try to log-in to the machine using your IT account...
- If you are having troubles, contact the IT in 7th floor of Math and Science Building ASAP.

Introductions

- Let's Introduce ourselves:
 - My name is: **Ealaf Selim**
 - Graduate Student in Computer Science Dept.
 - My email is: esselim@ucalgary.ca
 - My CT hours are:
 - Monday – 4 pm-5 – MS 237
 - Friday – 11 am-12 – MS 237
 - What are CT hours?!
- Now, it is your turn 😊

Expectations

- Prepare Yourself:
 - Check the wiki page of the Tutorial:
http://wiki.ucalgary.ca/page/Courses/Computer_Science/CPSC_203/CPSC_203_Template/Winter_2010_Lab_Manual
 - Know the schedule of the lab
- In the lab **Practice** and be **Interactive**
- Use the extra examples:
http://wiki.ucalgary.ca/page/Courses/Computer_Science/CPSC_203/CPSC_203_Template/Winter_2010_Lab_Manual#TA_Examples

Expectations

- Work early on Assignments. If you have questions, use my **CT hours**.
- Familiarize yourself with the **CIB** (Course Information Booklet).
- You are responsible for the correct submission of your quizzes and assignments. I grade what I receive.
- If you have questions about your grades or feedback, send me an email within a maximum of **three weeks** of receiving them.

Lab Norms

- Be punctual
- No Food or Drink in the lab
- Cell phones silent
- Log in only using your IT account
- Files saved on the machines are erased on log-off
- Do not move any machine
- You are encouraged to attend all tutorial sessions – Attendance is required for Quizzes

Tutorial Plan

- Part I: **Spreadsheets**
 - Microsoft Excel 2007
 - 6 Tutorial sessions + Quiz
- Part II: **Databases**
 - Microsoft Access 2007
 - 6 Tutorial sessions + Quiz
- Part III: **Programming**
 - Alice
 - Group Project
- More Details on page 8 in CIB.

Week 1 – Lab 1

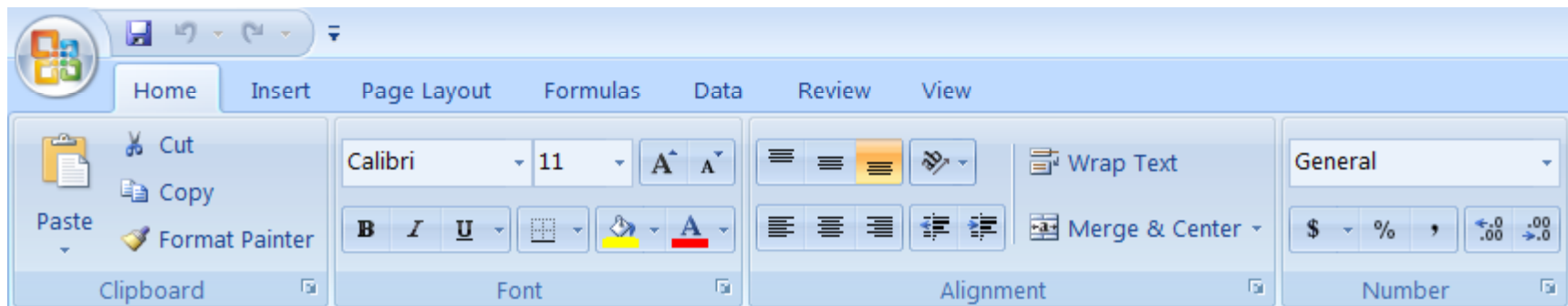
- Overview of Microsoft Excel 2007
- We will learn to:
 - Type in data
 - Use **AutoFill**
 - Edit **field formats**, such as currency, numbers, text, etc.
 - Calculate basic **statistics**

What is a Spreadsheet?

- A **computer application** that simulates a paper, **accounting worksheet**.
- Displays a **grid** consisting of **rows and columns**
- A cell contains either:
 - alphanumeric text, or
 - numeric values, or
 - a **formula** that defines how the contents of that cell is to be calculated from the contents of any other cells each time any cell is updated.
- Frequently used for **financial** information.
- Check <http://en.wikipedia.org/wiki/Spreadsheet>:

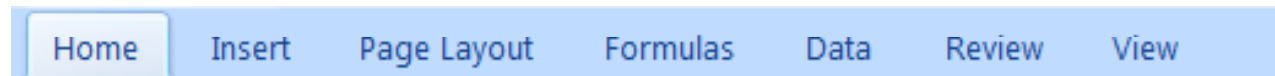
Overview of Excel 2007

- **Ribbon:**
 - Main toolbar + contextual menus
 - Above Work Area



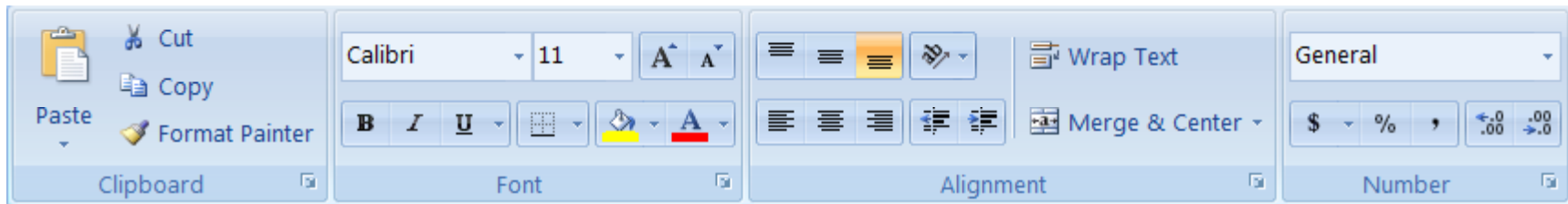
Overview of Excel 2007

- **Main Toolbar:**
 - Home, Insert, Page Layout, Formulas, Data, Review, and View
 - Different Contextual Menu for each of the main toolbar tabs



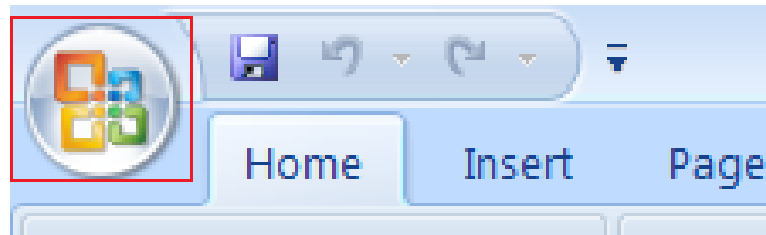
Overview of Excel 2007

- **Contextual Menu:**
 - Icons in Groups
 - Will introduce the contents gradually



Overview of Excel 2007

- **Office Button:**
 - gives access to performing tasks such as opening a file, saving a file, and printing.

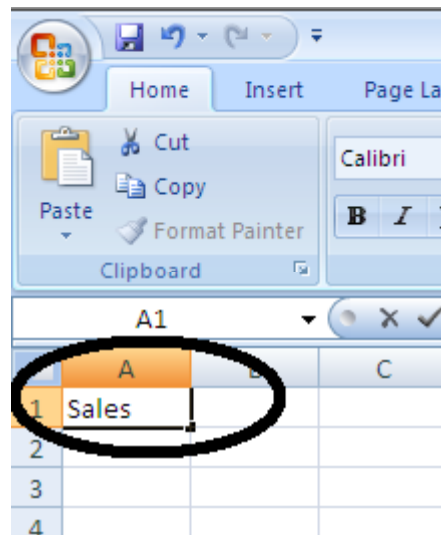


Overview of Excel 2007

- **Help Icon:**
 - Top Right corner .

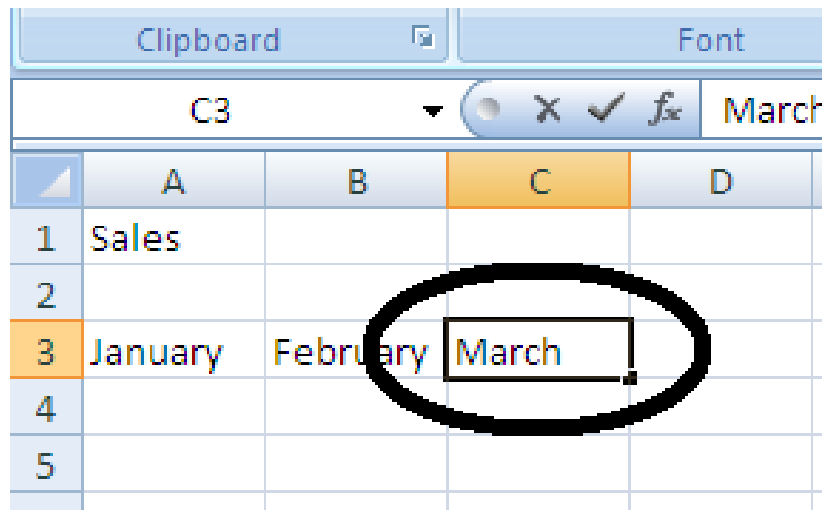


Entering Data



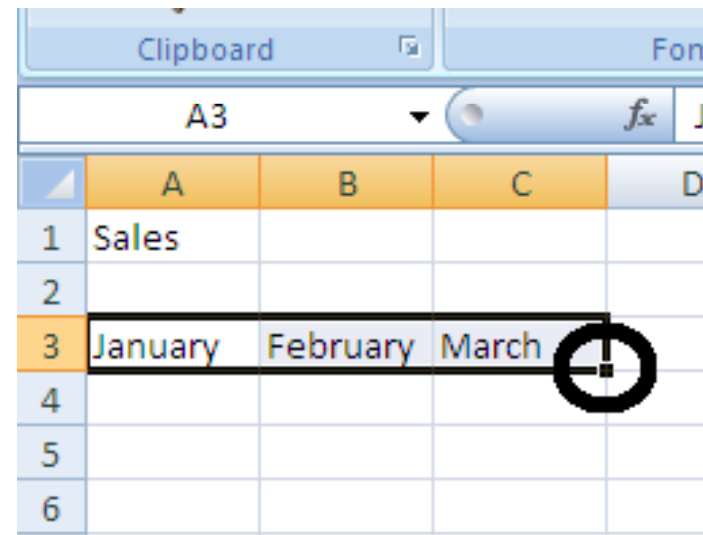
Using Autofill

- Can be used with both numbers and text
- Can be applied to both rows and columns
- Enter the start of sequence + two or more cells



This screenshot illustrates column autofill. The active cell is C3, containing the text 'March'. A thick black oval highlights the range from C3 to C4, indicating the area where the fill handle was dragged to copy the text down one row.

	A	B	C	D
1	Sales			
2				
3	January	February	March	
4				
5				

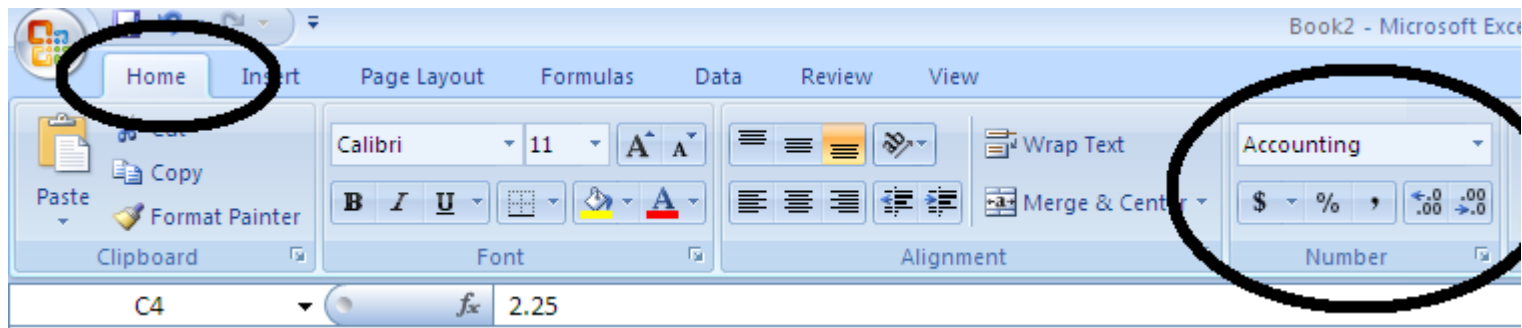


This screenshot illustrates row autofill. The active cell is A3, containing the text 'January'. A thick black oval highlights the range from A3 to D3, indicating the area where the fill handle was dragged to copy the text across three columns.

	A	B	C	D
1	Sales			
2				
3	January	February	March	
4				
5				
6				

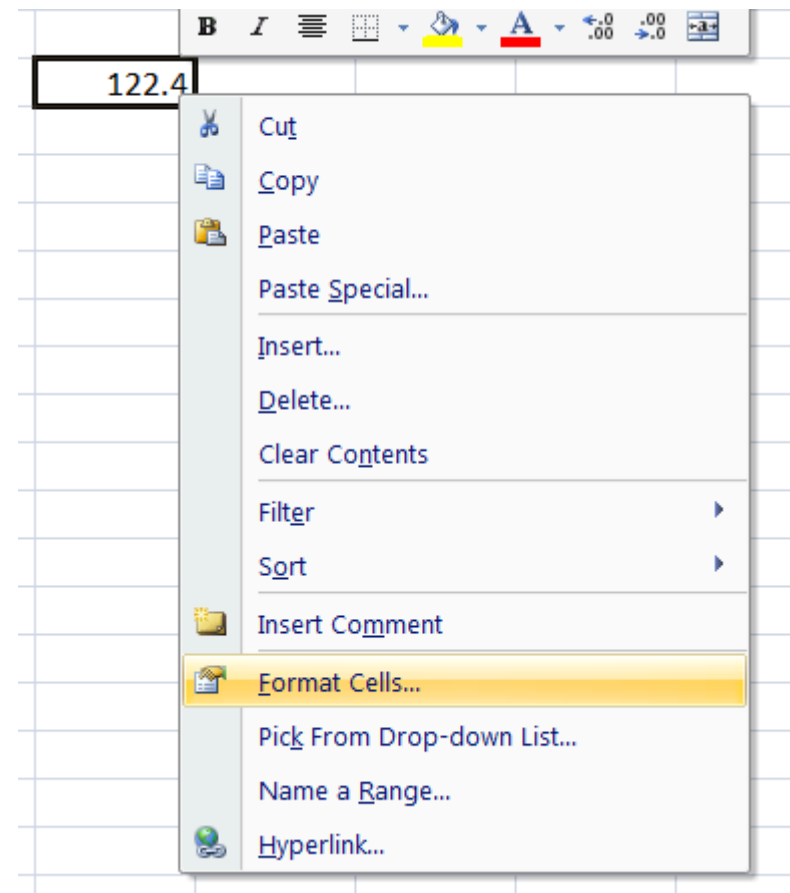
Editing Field Formats

- Makes data more readable
- Available from:
 - the ribbon ('Number' contextual menu as part of 'Home' in the main toolbar)

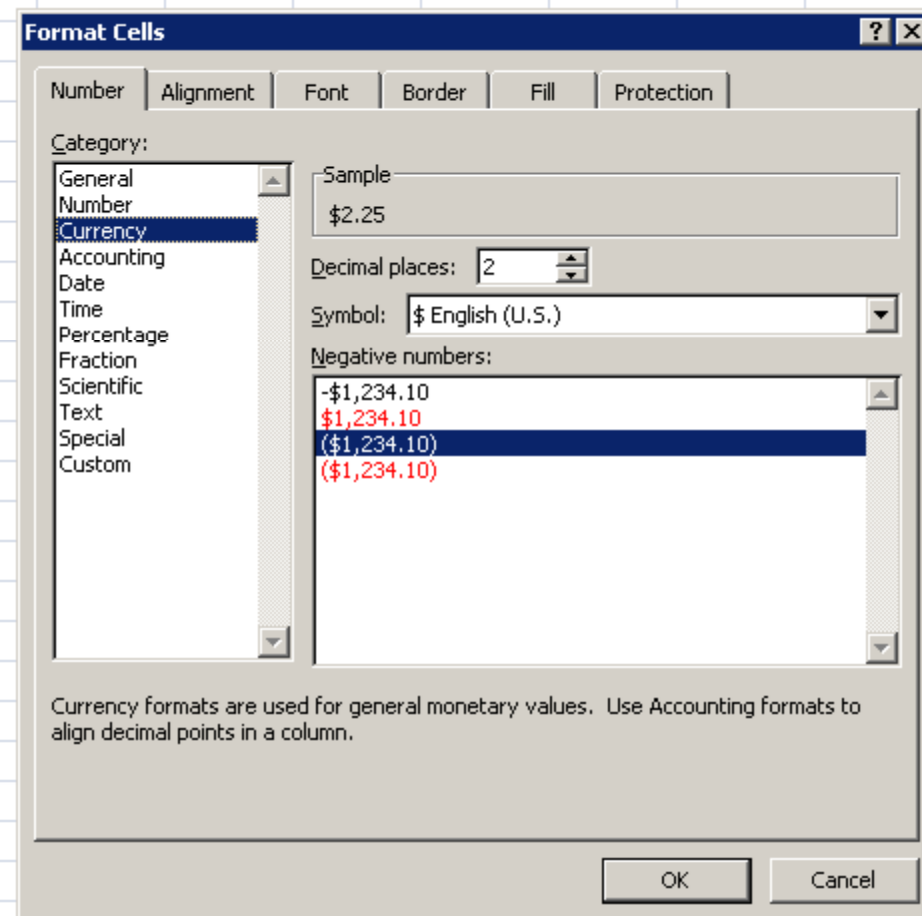


Editing Field Formats

- Or:
 - right-click using your mouse and select 'Format Cells' from the drop-down menu
 - In the new panel, select the 'Number' tab.



Editing Field Formats



Calculating Basic Statistics

- Excel Provides Built-in functions for basic statistics
- Functions can be specified directly in cells (including the range of cells to be included in the calculation), or in the Function Toolbar.
- Always use alternative calculations to check for errors when using functions.
- Some of the Built-in Functions available: Count, Min, Max, Average, Median, Mode, Standard Deviation

Calculating Basic Statistics

- **COUNT():**
 - gives the number of cells that contain numbers.
 - Its syntax is =COUNT(value1, value2, ...).
- **MIN():**
 - returns the smallest value in a set of numbers.
 - Its syntax is =MIN(number1, number2, ...).
- **MAX():**
 - returns the largest value in a set of numbers.
 - Its syntax is =MAX(number1, number2, ...).

Calculating Basic Statistics

- **AVERAGE():**
 - return the average, or arithmetic mean.
 - Its syntax is =AVERAGE(number1, number2, ...).
- **MEDIAN():**
 - returns the middle number in a set of numbers.
 - Its syntax is =MEDIAN(number1, number2, ...).
- **MODE():**
 - returns the most frequently occurring value of a set of numbers.
 - Its syntax is =MODE(number1, number2, ...).
- **STDEV():**
 - returns the standard deviation to measure of the dispersion of a set of values.
 - Its syntax is =STDEV(number1, number2, ...).

Calculating Basic Statistics

	A	B	C	D	E	F
1	Class					
	Gardes					
2	3	Average	2.47		=AVERAGE(A2:A16)	
3	0	Median	3.0		=MEDIAN(A2:A16)	
4	4	Mode	4		=MODE(A2:A16)	
5	4					
6	4	Maximum Grade	4		=MAX(A2:A16)	
7	2	Minimum Grade	0		=MIN(A2:A16)	
8	4					
9	1	Number of Students	15		=COUNT(A2:A16)	
10	4					
11	0					
12	3					
13	3					

Calculating Basic Statistics

	A	B	C	D
1		Speed of Sound (m/s)		
2		347.8		
3		343.4		
4		339.4		
5		342.1		
6		342.7		
7		338.8		
8		344.7		
9		342.8		
10				
11	Average Velocity	342.7		=AVERAGE(B2:B9)
12	Standard Deviation	2.9		=STDEV(B2:B9)

More Examples

- [http://wiki.ucalgary.ca/page/Courses/Computer Science/CPSC 203/CPSC 203 Template/Labs Template/TA Examples for Spreadsheets #Navneet: Week 1 - Lab 1](http://wiki.ucalgary.ca/page/Courses/Computer%20Science/CPSC%20203/CPSC%20203%20Template/Labs%20Template/TA%20Examples%20for%20Spreadsheets#Navneet:Week%201%20-%20Lab%201)